FIG. 1

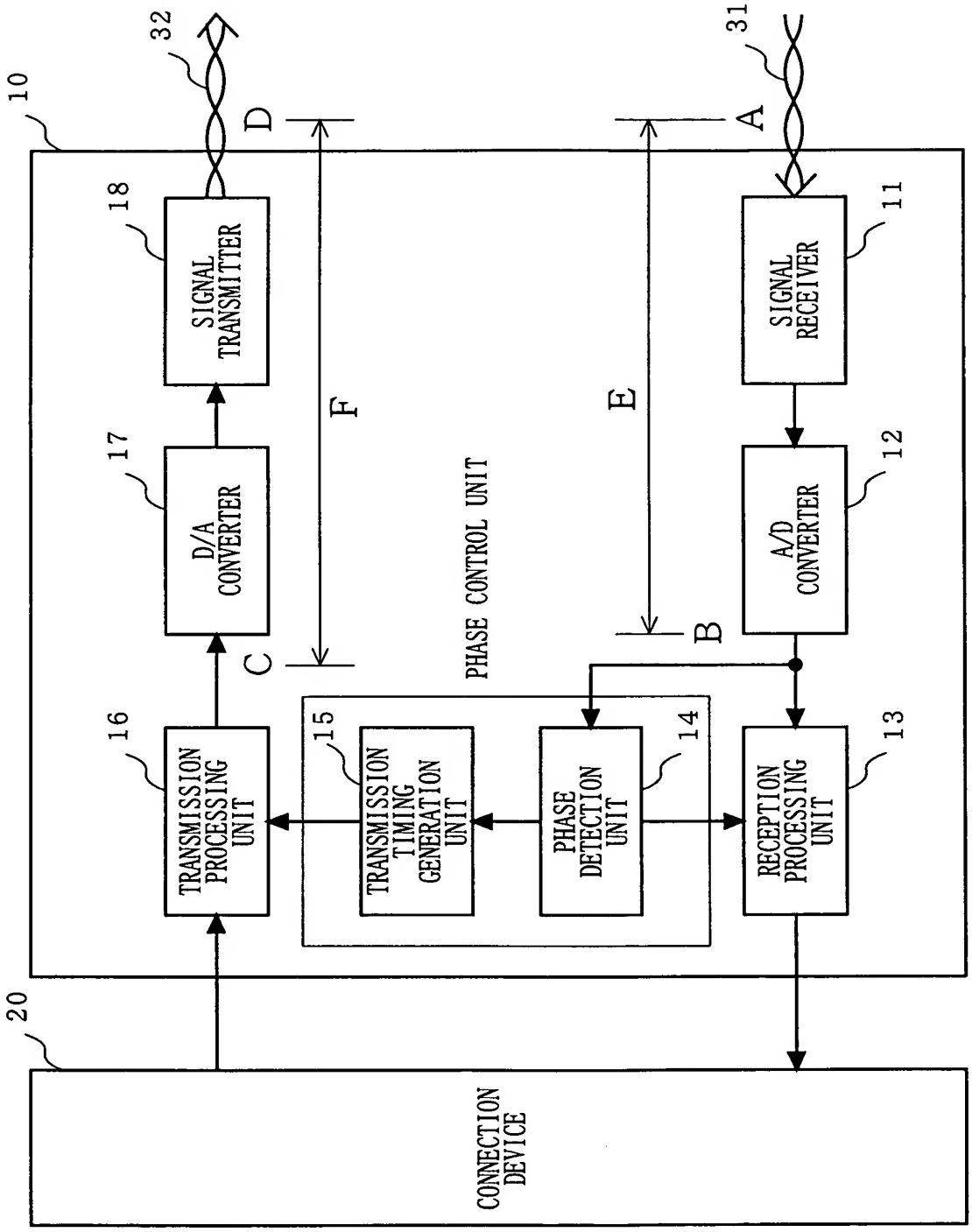

10
20
31
32
A
B
C
D
E
F
SIGNAL TRANSMITTER
18
D/A CONVERTER
17
TRANSMISSION PROCESSING UNIT
16
SIGNAL RECEIVER
11
A/D CONVERTER
12
RECEPTION PROCESSING UNIT
13
PHASE CONTROL UNIT
TRANSMISSION TIMING GENERATION UNIT
15
PHASE DETECTION UNIT
14
CONNECTION DEVICE

FIG. 2

B(k) / B(k-1)	+7	+5	+3	+1	−1	−3	−5	−7
+7					00	10	11	01
+5					01	00	10	11
+3					11	01	00	10
+1					10	11	01	00
−1	00	10	11	01				
−3	01	00	10	11				
−5	11	01	00	10				
−7	10	11	01	00				

PARALLEL DATA

PARALLEL DATA

FIG. 3

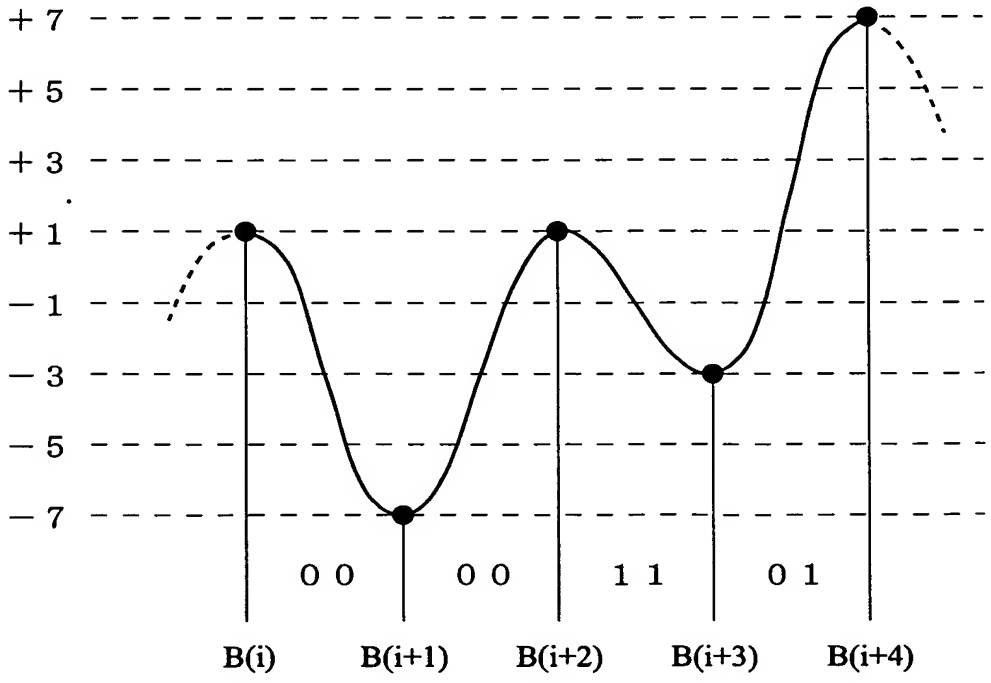


FIG. 4

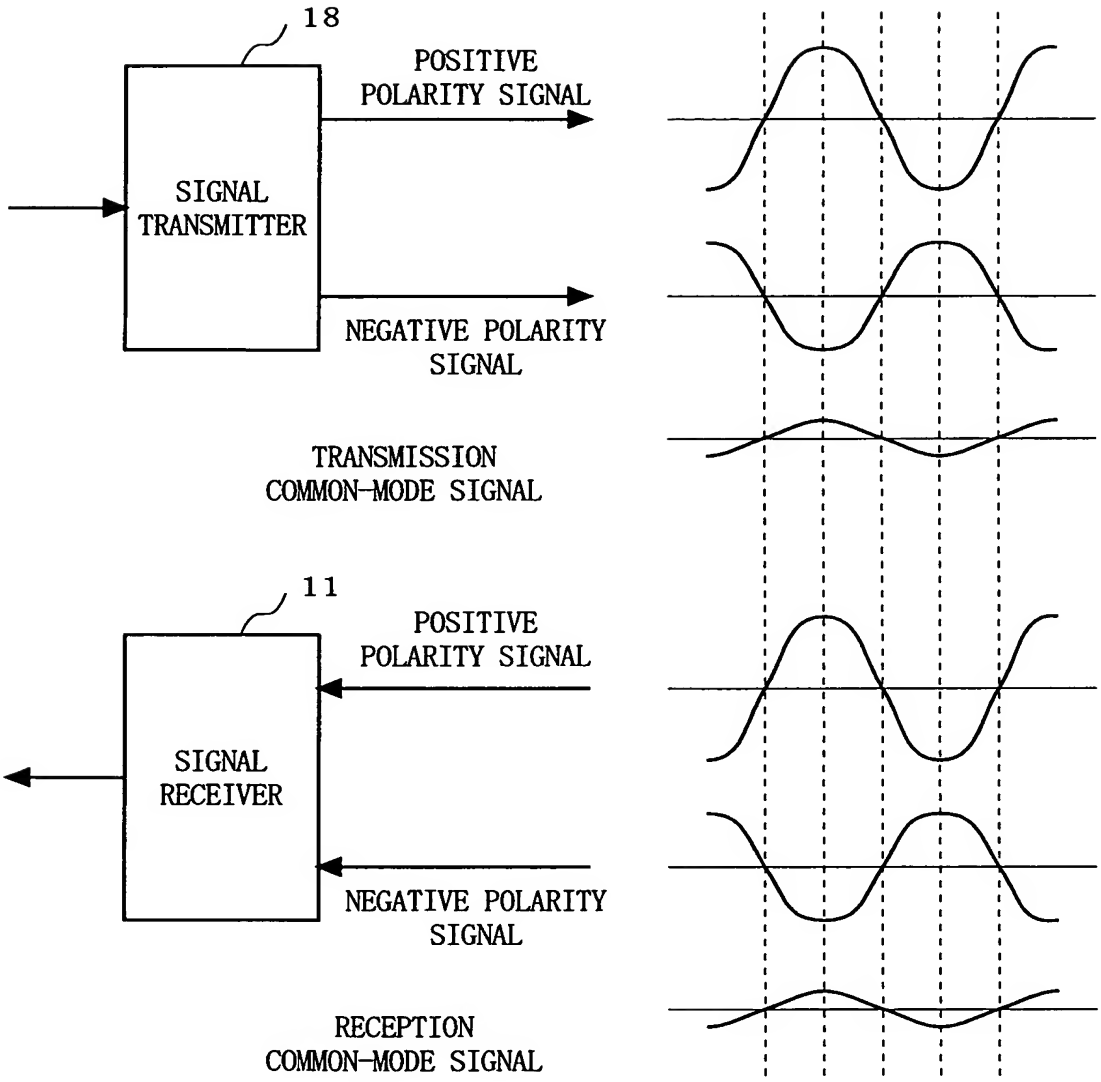

18
POSITIVE POLARITY SIGNAL
SIGNAL TRANSMITTER
NEGATIVE POLARITY SIGNAL
TRANSMISSION COMMON-MODE SIGNAL
11
POSITIVE POLARITY SIGNAL
SIGNAL RECEIVER
NEGATIVE POLARITY SIGNAL
RECEPTION COMMON-MODE SIGNAL

FIG. 5

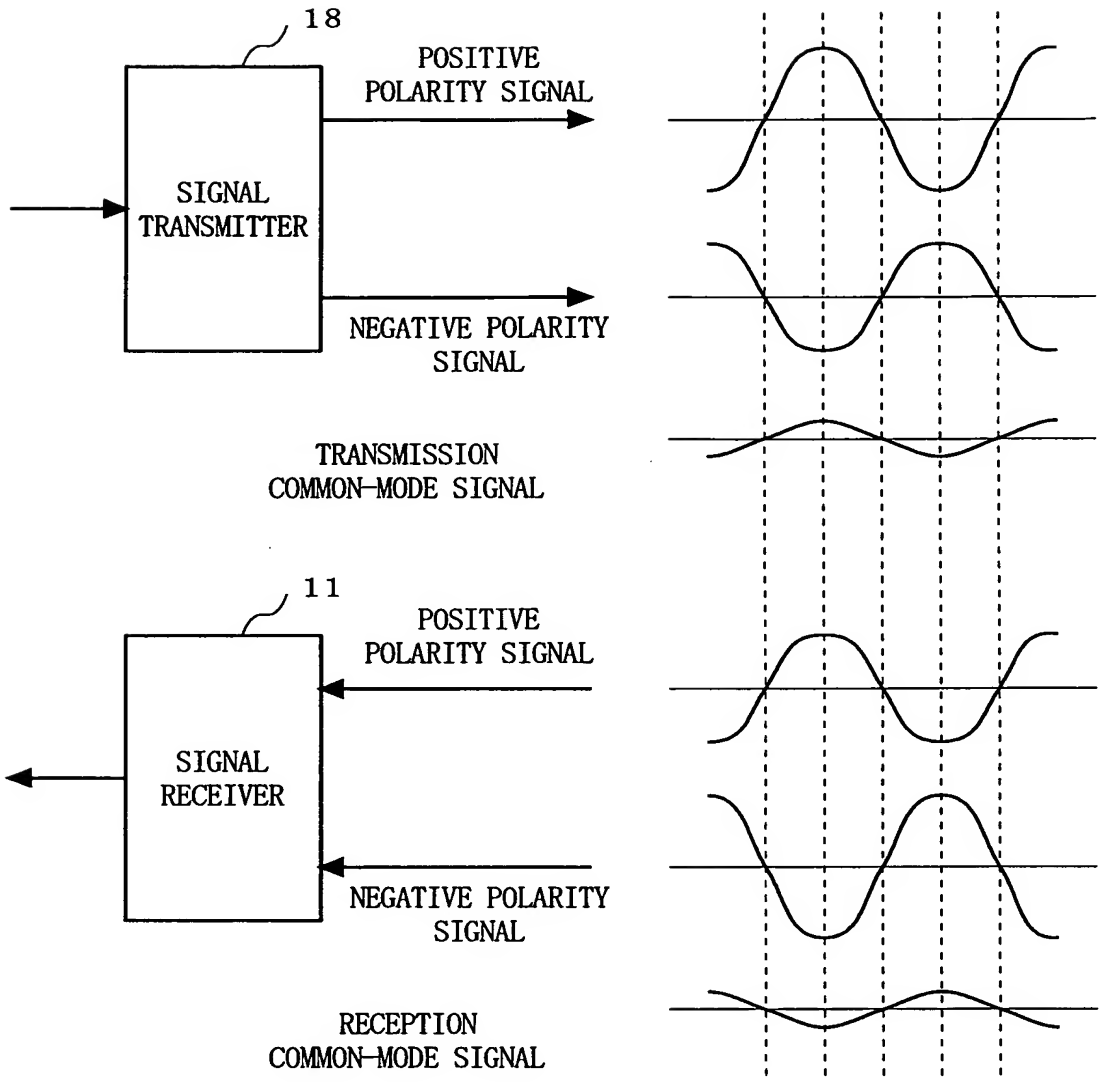

18
POSITIVE POLARITY SIGNAL
SIGNAL TRANSMITTER
NEGATIVE POLARITY SIGNAL
TRANSMISSION COMMON-MODE SIGNAL
11
POSITIVE POLARITY SIGNAL
SIGNAL RECEIVER
NEGATIVE POLARITY SIGNAL
RECEPTION COMMON-MODE SIGNAL

FIG. 6

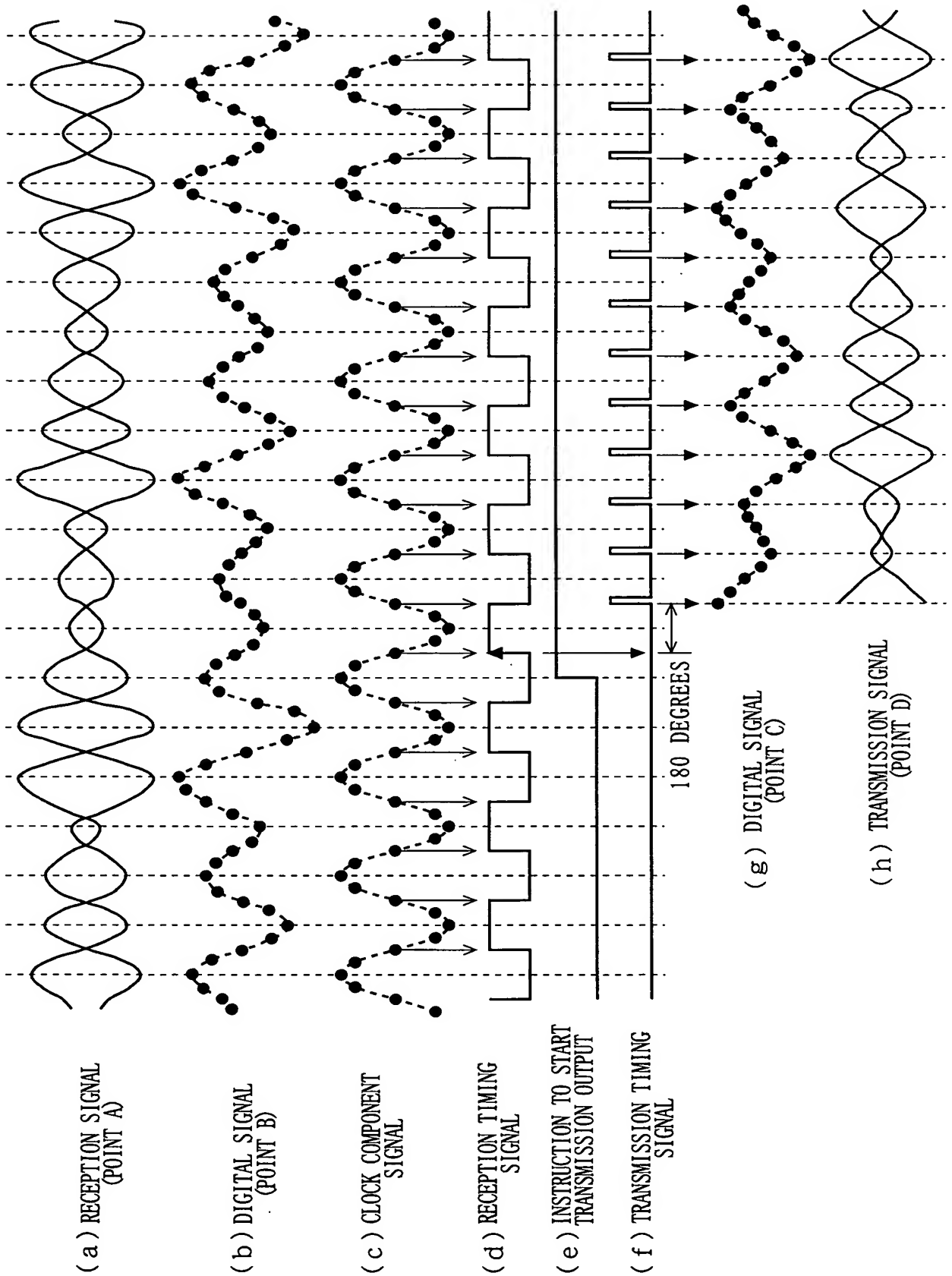

(a) RECEPTION SIGNAL (POINT A)
(b) DIGITAL SIGNAL (POINT B)
(c) CLOCK COMPONENT SIGNAL
(d) RECEPTION TIMING SIGNAL
(e) INSTRUCTION TO START TRANSMISSION OUTPUT
(f) TRANSMISSION TIMING SIGNAL
180 DEGREES
(g) DIGITAL SIGNAL (POINT C)
(h) TRANSMISSION SIGNAL (POINT D)

FIG. 7

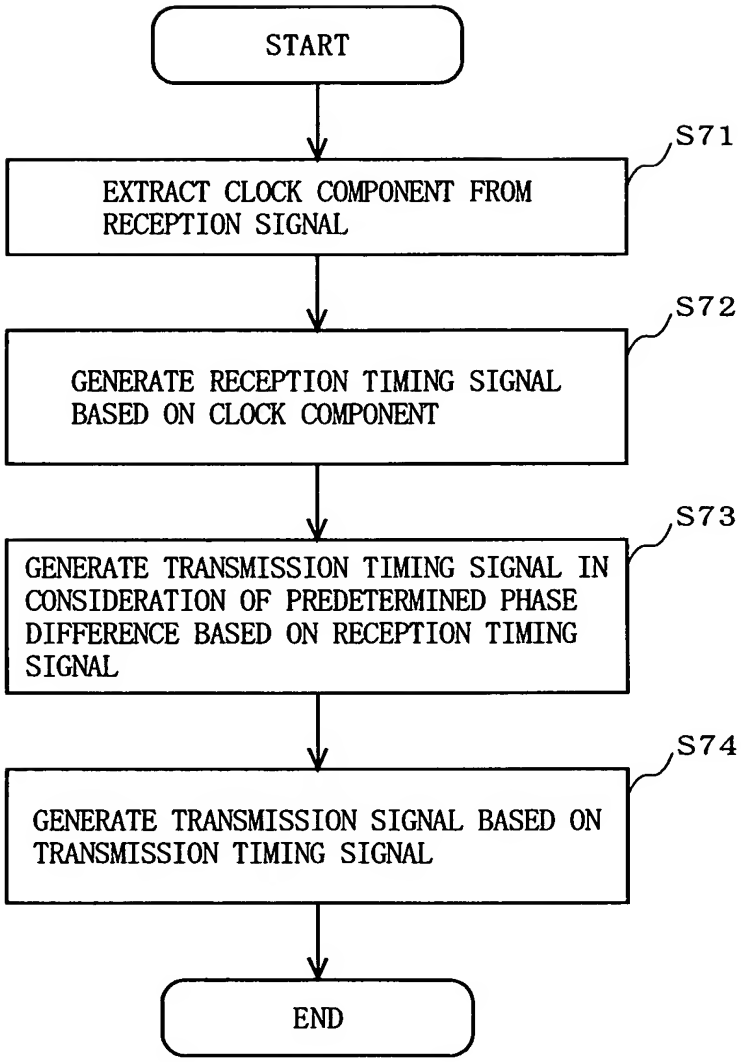

START
S71
EXTRACT CLOCK COMPONENT FROM RECEPTION SIGNAL
S72
GENERATE RECEPTION TIMING SIGNAL BASED ON CLOCK COMPONENT
S73
GENERATE TRANSMISSION TIMING SIGNAL IN CONSIDERATION OF PREDETERMINED PHASE DIFFERENCE BASED ON RECEPTION TIMING SIGNAL
S74
GENERATE TRANSMISSION SIGNAL BASED ON TRANSMISSION TIMING SIGNAL
END

FIG. 8

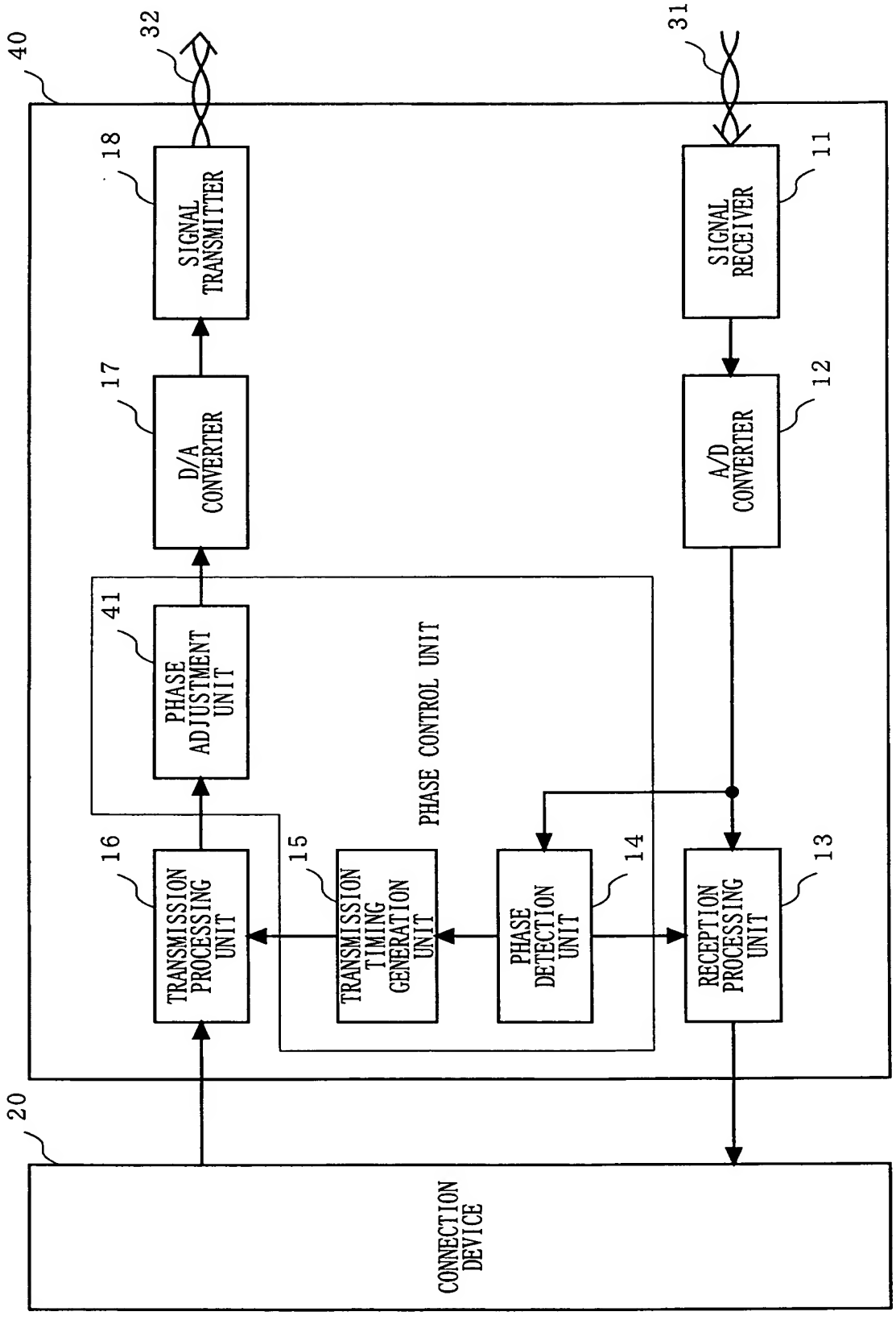
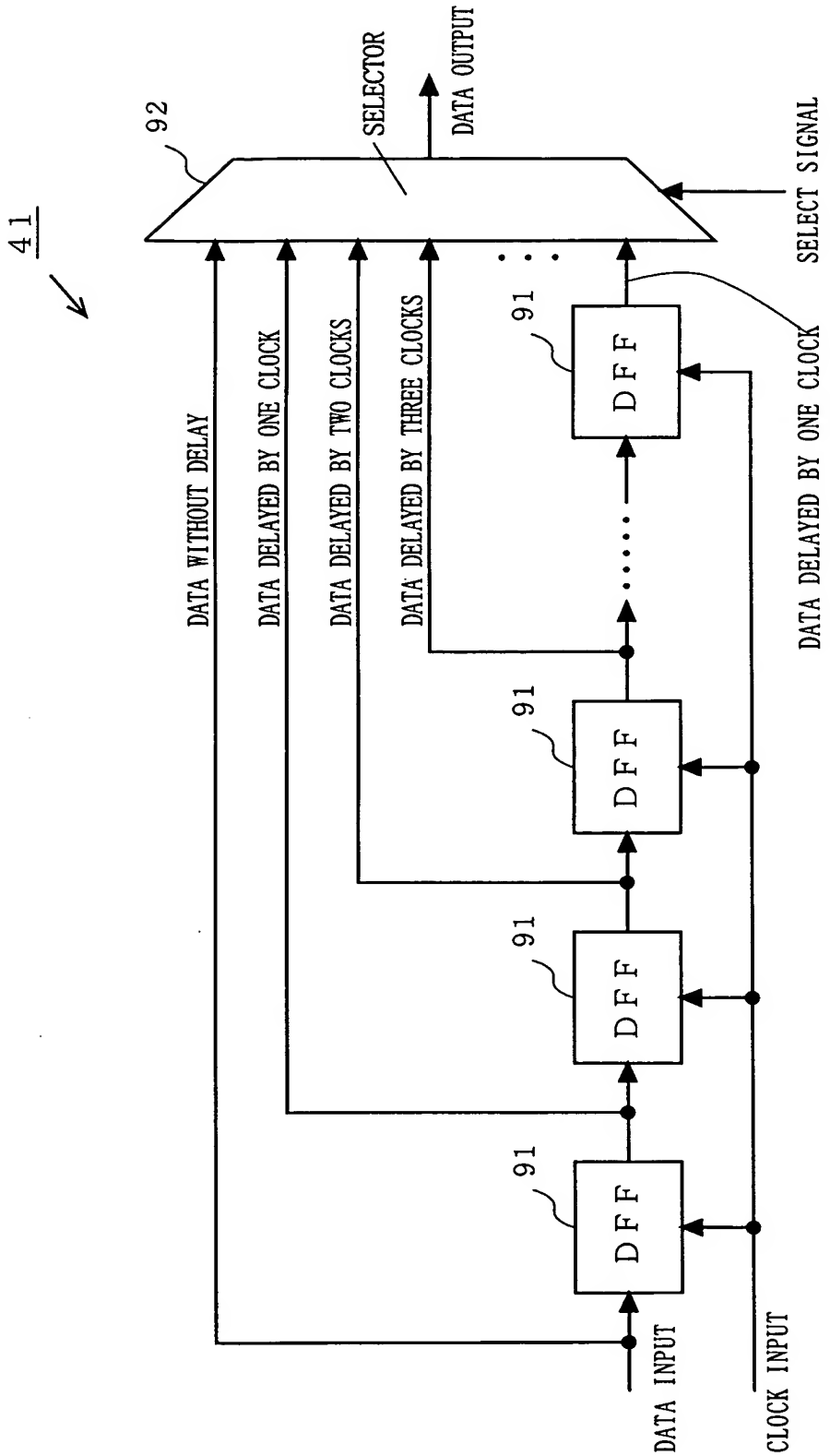

40
32
31
18
SIGNAL TRANSMITTER
11
SIGNAL RECEIVER
17
D/A CONVERTER
12
A/D CONVERTER
41
PHASE ADJUSTMENT UNIT
PHASE CONTROL UNIT
16
TRANSMISSION PROCESSING UNIT
15
TRANSMISSION TIMING GENERATION UNIT
PHASE DETECTION UNIT
14
RECEPTION PROCESSING UNIT
13
20
CONNECTION DEVICE

FIG. 9


41
92
SELECTOR
DATA OUTPUT
SELECT SIGNAL
DATA WITHOUT DELAY
DATA DELAYED BY ONE CLOCK
DATA DELAYED BY TWO CLOCKS
DATA DELAYED BY THREE CLOCKS
DATA DELAYED BY ONE CLOCK
91
DFF
DATA INPUT
CLOCK INPUT

REPLACED BY ART 34 AMDT.

FIG. 10

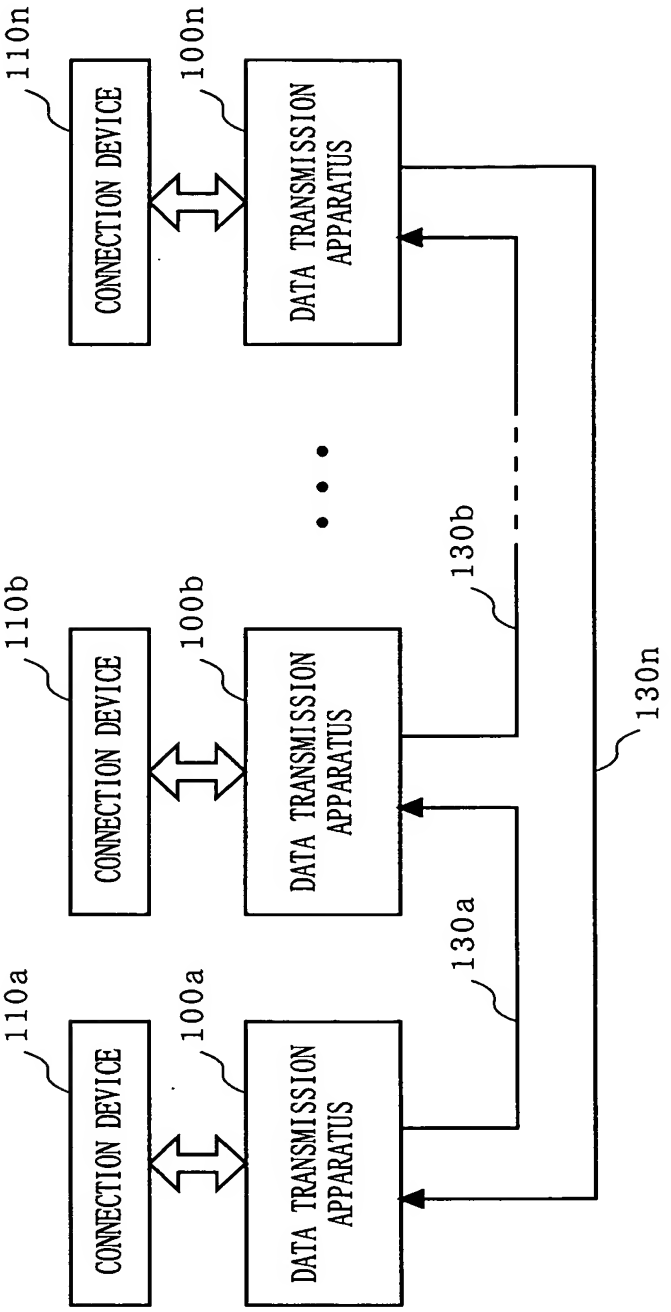


FIG. 11

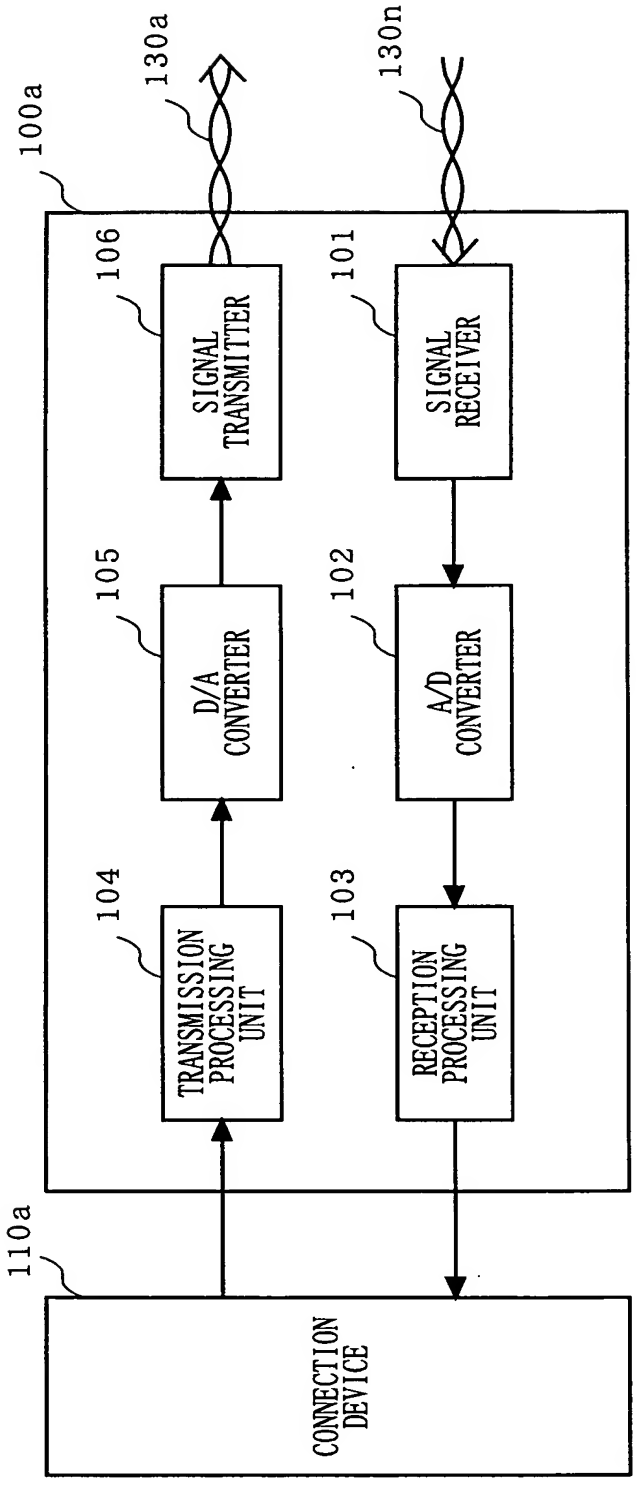
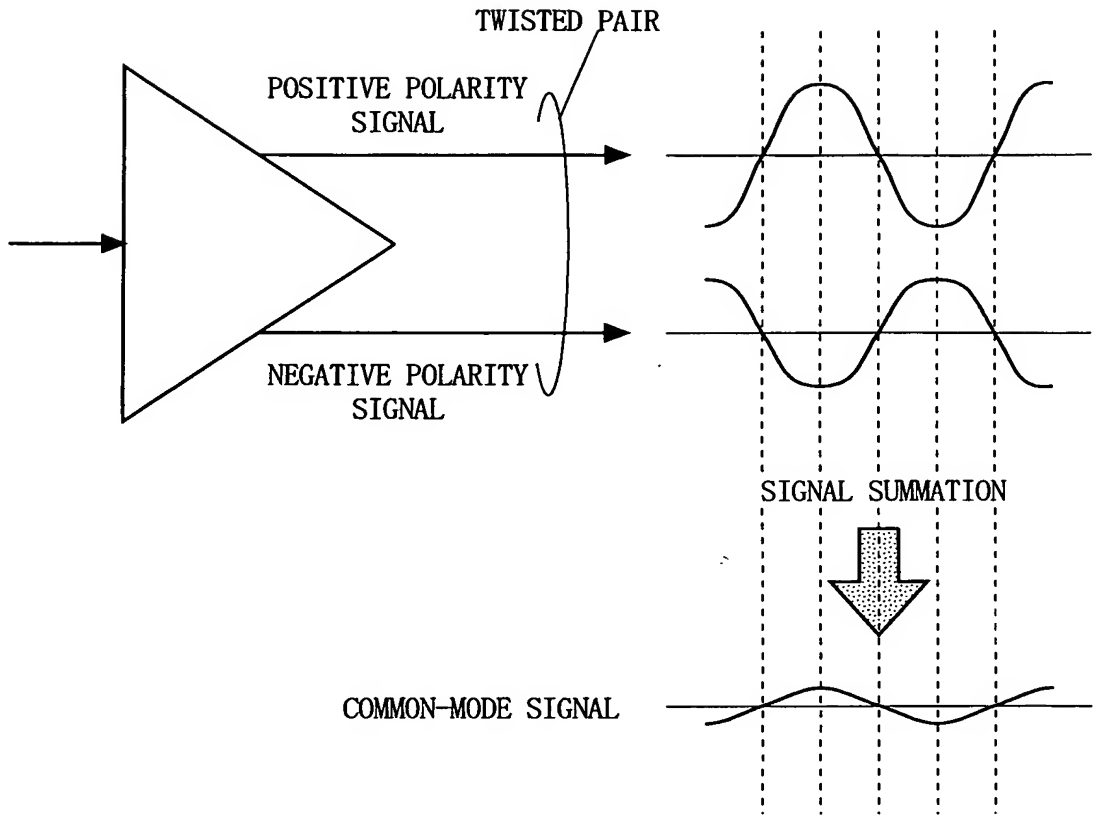

100a
130a
130n
106
101
SIGNAL TRANSMITTER
SIGNAL RECEIVER
105
102
D/A CONVERTER
A/D CONVERTER
104
103
TRANSMISSION PROCESSING UNIT
RECEPTION PROCESSING UNIT
110a
CONNECTION DEVICE

FIG. 12


TWISTED PAIR
POSITIVE POLARITY SIGNAL
NEGATIVE POLARITY SIGNAL
SIGNAL SUMMATION
COMMON-MODE SIGNAL